

## Environmental Protection Agency

## § 1065.640

this section that is from zero to this declared minimum power.

[73 FR 37324, June 30, 2008, as amended at 73 FR 59330, Oct. 8, 2008; 75 FR 23045, Apr. 30, 2010; 76 FR 57453, Sept. 15, 2011]

EFFECTIVE DATE NOTE: At 78 FR 36398, June 17, 2013, §1065.610 was amended by revising paragraph (c)(3), effective Aug. 16, 2013. For the convenience of the user, the revised text is set forth as follows:

### § 1065.610 Duty cycle generation.

\* \* \* \* \*

(c) \* \* \*

(3) *Intermediate speed.* If your normalized duty cycle specifies a speed as “intermediate speed,” use your torque-versus-speed curve to determine the speed at which maximum torque occurs. This is peak torque speed. If maximum torque occurs in a flat region of the torque-versus-speed curve, your peak torque speed is the midpoint between the lowest and highest speeds at which the trace reaches the flat region. For purposes of this paragraph (c)(3), a flat region is one in which measured torque values are within 2% of the maximum recorded value. Identify your reference intermediate speed as one of the following values:

- (i) Peak torque speed if it is between (60 and 75) % of maximum test speed.
- (ii) 60% of maximum test speed if peak torque speed is less than 60% of maximum test speed.
- (iii) 75% of maximum test speed if peak torque speed is greater than 75% of maximum test speed.

\* \* \* \* \*

### § 1065.630 1980 international gravity formula.

The acceleration of Earth’s gravity,  $a_g$ , varies depending on your location. Calculate  $a_g$  at your latitude, as follows:

$$a_g = 9.7803267715 \cdot [1 + s \\ 5.2790414 \cdot 10^{-3} \cdot \sin^2(\theta) + \\ 2.32718 \cdot 10^{-5} \cdot \sin^4(\theta) + \\ 1.262 \cdot 10^{-7} \cdot \sin^6(\theta) + \\ 7 \cdot 10^{-10} \cdot \sin^8(\theta)] \quad \text{Eq. 1065.630-1}$$

Where:

$\theta$  = Degrees north or south latitude.

Example:

$\theta = 45^\circ$

$$a_g = 9.7803267715 \cdot (1 + \\ 5.2790414 \cdot 10^{-3} \cdot \sin^2(45) + \\ 2.32718 \cdot 10^{-5} \cdot \sin^4(45) + \\ 1.262 \cdot 10^{-7} \cdot \sin^6(45) + \\ 7 \cdot 10^{-10} \cdot \sin^8(45)) \\ a_g = 9.8178291229 \text{ m/s}^2$$

### § 1065.640 Flow meter calibration calculations.

This section describes the calculations for calibrating various flow meters. After you calibrate a flow meter using these calculations, use the calculations described in §1065.642 to calculate flow during an emission test. Paragraph (a) of this section first describes how to convert reference flow meter outputs for use in the calibration equations, which are presented on a molar basis. The remaining paragraphs describe the calibration calculations that are specific to certain types of flow meters.

(a) *Reference meter conversions.* The calibration equations in this section use molar flow rate,  $\dot{n}_{\text{ref}}$ , as a reference quantity. If your reference meter outputs a flow rate in a different quantity, such as standard volume rate,  $\dot{V}_{\text{stdref}}$ , actual volume rate,  $\dot{V}_{\text{actref}}$ , or mass rate,  $\dot{m}_{\text{ref}}$ , convert your reference meter output to a molar flow rate using the following equations, noting that while values for volume rate, mass rate, pressure, temperature, and molar mass may change during an emission test, you should ensure that they are as constant as practical for each individual set point during a flow meter calibration: